Part 9 · Spot the Mistake

Each solution below reaches a wrong answer, and exactly one step is to blame. Find the first wrong step and rewrite it correctly. Marking other people's work is the fastest way to stop making their mistakes.

🔍 Spot the Mistake

Finding the zeroes of x^2-2x-8

Step 1. Split the middle term: numbers multiplying to -8 and adding to -2 are -2 and 4.

Step 2. $x^2-2x-8=(x-2)(x+4)$

Step 3. Zeroes are $x=2$ and $x=-4$.

_____ The first wrong step is Step _____ . What should it say?

_____

🔍 Spot the Mistake

Verifying the sum-of-zeroes relationship for $3x^2+5x-2$

Step 1. Zeroes are $\frac{1}{3}$ and -2 (given).

Step 2. Sum of zeroes ¿ $\frac{1}{3}+(-2)=\frac{-5}{3}$.

Step 3. This should equal $\frac{b}{a}=\frac{5}{3}$, so the relationship fails.

_____ The first wrong step is Step _____ . What should it say?

_____

🔍 Spot the Mistake

Building a quadratic from sum ¿ 4, product ¿ 1

Step 1. Use x^2+¿.

Step 2. x^2+4x+1

Step 3. Check: this polynomial should have zeroes summing to 4.

_____ The first wrong step is Step _____ . What should it say?

_____

Every quadratic and cubic you meet from here on has its zeroes hiding in plain sight inside its coefficients — you now know exactly how to find them.